

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) An isolated population of insulin-producing cells made by a process comprising contacting, for at least twenty-four hours, non-insulin producing cells with a growth factor selected from the group consisting of GLP-1, growth factors having amino acid sequences substantially homologous to GLP-1, and fragments thereof, wherein the amino acid sequences substantially homologous to GLP-1 and fragments thereof comprise residues H⁷, G¹⁰, F¹², T¹³, and D¹⁵ of GLP-1 and have the ability to differentiate non-insulin producing cells into insulin-producing cells.
2. (original) The population of claim 1, wherein the non-insulin producing cells are contacted with the growth factor in vitro.
3. (original) The population of claim 1, wherein the non-insulin producing cells are contacted with the growth factor in vivo.
4. (previously presented) The population of claim 1, wherein the non-insulin producing cells comprise cells that are not pancreatic beta cells.

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5. (original) The population of claim 1, wherein the non-insulin producing cells comprise pancreatic cells.
6. (original) The population of claim 1, wherein the non-insulin producing cells comprise pancreatic acinar cells.
7. (original) The population of claim 1, wherein the non-insulin producing cells comprise stem cells.
8. (original) The population of claim 1, wherein the non-insulin producing cells comprise pancreatic stem cells.
9. (original) The population of claim 1, wherein the non-insulin producing cells are mammalian cells.
10. (original) The population of claim 9, wherein the mammalian cells are human cells.
11. (canceled)
12. (currently amended) An isolated population of insulin-producing cells made by a process comprising contacting, for at least twenty-four hours, noninsulin-producing cells with a growth factor selected from the group consisting of Exendin-4, growth factors having amino acid

sequences substantially homologous to Exendin-4, or fragments thereof, wherein the amino acid sequences substantially homologous to Exendin-4 and fragments thereof comprise residues H¹, G⁴, F⁶, T⁷, and D⁹ of Exendin-4 and have the ability to differentiate non-insulin producing cells into insulin producing cells.

13. (original) The population of claim 12, wherein the non-insulin producing cells are contacted with the growth factor *in vitro*.

14. (original) The population of claim 12, wherein the non-insulin producing cells are contacted with the growth factor *in vivo*.

15. (previously presented) The population of claim 12, wherein the non-insulin producing cells comprise cells that are not pancreatic beta cells.

16. (original) The population of claim 12, wherein the non-insulin producing cells comprise pancreatic cells.

17. (original) The population of claim 12, wherein the non-insulin producing cells comprise pancreatic acinar cells.

18. (original) The population of claim 12, wherein the non-insulin producing cells comprise stem cells.

19. (original) The population of claim 12, wherein the non-insulin producing cells comprise pancreatic stem cells.
20. (original) The population of claim 12, wherein the non-insulin producing cells are mammalian cells.
21. (original) The population of claim 20, wherein the mammalian cells are human cells.
22. (canceled)
23. (currently amended) A method of differentiating non-insulin producing cells into insulin producing cells, comprising contacting, for at least twenty-four hours, the non-insulin producing cells with a growth factor selected from the group consisting of GLP-1, growth factors having amino acid sequences substantially homologous to GLP-1, and fragments thereof, wherein the amino acid sequences substantially homologous to GLP-1 and fragments thereof comprise residues H⁷, G¹⁰, F¹², T¹³, and D¹⁵ of GLP-1 and have the ability to differentiate non-insulin producing cells into insulin producing cells.
24. (canceled)

25. (original) The method of claim 23, wherein the non-insulin producing cells are contacted with the growth factor *in vitro*.

26. (original) The method of claim 23, wherein the non-insulin producing cells are contacted with the growth factor *in vivo*.

27. (currently amended) A method of differentiating non-insulin producing cells into insulin producing cells, comprising contacting, for at least twenty-four hours, the non-insulin producing cells with a growth factor selected from the group consisting of Exendin-4, growth factors having amino acid sequences substantially homologous to Exendin-4, or fragments thereof, wherein the amino acid sequences substantially homologous to Exendin-4 and fragments thereof comprise residues H¹, G⁴, F⁶, T⁷, and D⁹ of Exendin-4 and have the ability to differentiate non-insulin producing cells into insulin producing cells.

28. (canceled)

29. (original) The method of claim 27, wherein the non-insulin producing cells are contacted with the growth factor *in vitro*.

30. (original) The method of claim 27, wherein the non-insulin producing cells are contacted with the growth factor *in vivo*.

31. (currently amended) A method of enriching a population of cells for insulin-producing cells, comprising contacting, for at least twenty-four hours, the population of cells with GLP-1 or exendin-4, growth factors having amino acid sequences substantially homologous to GLP-1 or exendin-4, or fragments thereof, that differentiate non-insulin-producing cells into insulin-producing cells, wherein the amino acid sequences substantially homologous to GLP-1 or Exendin-4 and fragments thereof exclude hepatocyte growth factor and comprise residues H⁷⁽¹⁾, G¹⁰⁽⁴⁾, F¹²⁽⁶⁾, T¹³⁽⁷⁾, and D¹⁵⁽⁹⁾ of GLP-1 and Exendin-4 and have the ability to differentiate non-insulin-producing cells into insulin-producing cells.

32. (currently amended) A method of promoting pancreatic amylase producing cells to produce insulin, comprising contacting, for at least twenty-four hours, the pancreatic amylase producing cells with a growth factor selected from the group consisting of GLP-1, growth factors having amino acid sequences substantially homologous to GLP-1, and fragments thereof, wherein the amino acid sequences substantially homologous to GLP-1 and fragments thereof comprise residues H⁷, G¹⁰, F¹², T¹³, and D¹⁵ of GLP-1 and have the ability to differentiate non-insulin producing cells into insulin producing cells.

33. (currently amended) A method of promoting pancreatic amylase producing cells to produce insulin, comprising contacting, for at least twenty-four hours, the pancreatic amylase producing cells with a growth factor selected from the group consisting of Exendin-4, growth factors having amino acid sequences substantially homologous to Exendin-4, and fragments thereof, wherein the amino acid sequences substantially homologous to Exendin-4 and fragments

thereof comprise residues H¹, G⁴, F⁶, T⁷, and D⁹ of Exendin-4 and have the ability to differentiate non-insulin producing cells into insulin producing cells.

34. (currently amended) A method of inducing insulin secretion in a subject lacking insulin-producing cells, comprising administering to the subject a growth factor selected from the group consisting of GLP-1, growth factors having amino acid sequences substantially homologous to GLP-1, and fragments thereof by continuous infusion for at least twenty four hours, wherein the amino acid sequences substantially homologous to GLP-1 and fragments thereof comprise residues H⁷, G¹⁰, F¹², T¹³, and D¹⁵ of GLP-1 and have the ability to differentiate non-insulin producing cells into insulin producing cells.

35. (original) The method of claims 34, wherein the growth factor differentiates non-insulin producing cells into insulin producing cells.

36. (currently amended) A method of inducing insulin secretion in a subject lacking insulin-producing cells, comprising administering to the subject a growth factor selected from the group consisting of Exendin-4, growth factors having amino acid sequences substantially homologous to Exendin-4, and fragments thereof, wherein the exendin-4 contacts non-insulin-producing cells for at least twenty-four hours, wherein the exendin-4 contacts non-insulin-producing cells for at least twenty-four hours[,] ~~and wherein the non-insulin-producing cells are differentiated into insulin producing cells~~ wherein the amino acid sequences substantially homologous to Exendin-

4 and fragments thereof comprise residues H¹, G⁴, F⁶, T⁷, and D⁹ of Exendin-4 and have the ability to differentiate non-insulin-producing cells into insulin-producing cells.

37. (original) The method of claim 36, wherein the growth factor is administered by bolus at least once.

38. (canceled)

39. (withdrawn) A method of treating diabetes in a subject, comprising

- (a) obtaining non-insulin producing cells from the subject being treated;
- (b) contacting the non-insulin producing cells with a growth factor, thereby differentiating non-insulin producing cells into insulin-producing cells; and
- (c) administering the insulin-producing cells from step (b) to the diabetic subject.

40. (withdrawn) The method of claim 39, wherein the non-insulin producing cells are pancreatic cells.

41. (withdrawn) The method of claim 39, wherein the non-insulin producing cells are stem cells.

42. (withdrawn) A method of treating diabetes in a subject, comprising

- (a) obtaining non-insulin producing cells from the subject being treated;

- (b) contacting the non-insulin producing cells with a growth factor, thereby differentiating non-insulin producing cells into insulin producing cells;
- (c) altering the surface antigens of the insulin producing cells of step (b), thereby reducing the likelihood that the insulin producing cells will cause an immune response; and
- (d) administering the cells with altered surface antigens from step (c) to the diabetic subject.

43. (withdrawn) The method of claim 42, wherein the non-insulin producing cells are pancreatic cells.

44. (withdrawn) The method of claim 42, wherein the non-insulin producing cells are stem cells.

45. (withdrawn) A method of treating diabetes in a subject, comprising

- (a) obtaining non-insulin producing cells from a donor;
- (b) contacting the non-insulin producing cells with a growth factor, thereby differentiating non-insulin producing cells into insulin producing cells; and
- (c) administering the insulin producing cells from step (b) to the diabetic subject.

46. (withdrawn) The method of claim 45, wherein the donor is a cadaver.

47. (withdrawn) The method of claim 45, where the non-insulin producing cells are pancreatic cells.
48. (withdrawn) The method of claim 45, wherein the non-insulin producing cells are stem cells.
49. (withdrawn) A method of treating diabetes in a subject, comprising
- (a) obtaining non-insulin producing cells from a donor;
 - (b) contacting the non-insulin producing cells with a growth factor, thereby differentiating non-insulin producing cells into insulin producing cells;
 - (c) altering the surface antigens of the insulin producing cells, thereby reducing the likelihood of that the insulin producing cells will cause an immune response; and
 - (d) administering the cells with altered surface antigens from step (c) to the diabetic subject.
50. (withdrawn) The method of claim 49, wherein the donor is a cadaver.
51. (withdrawn) The method of claims 49, wherein the non-insulin producing cells are pancreatic cells.
52. (withdrawn) The method of claim 49, wherein the non-insulin producing cells are stem cells.